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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,940	01/09/2002	Allon Adir	ADIR1	5128

1444 7590 10/12/2004

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EXAMINER	
SUN, XIUQIN	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/040,940	ADIR ET AL.	
	Examiner	Art Unit	
	Xiuqin Sun	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *54-75* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *54-75* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 54-65 and 71-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shrote (U.S. Pat. No. 5774358) in view of Liu (U.S. Pub. No. 20030158720).

Shrote teaches a method and apparatus of test program generation for a system-under-test and computer software product comprising a computer-readable medium for verification of a system design (see Abstract and Figs. 2 and 3A-3B), comprising the steps and means of: using a primary input stream to generate a sequence of test program instructions for said system-under-test (Fig. 2; col. 6, lines 9-19; col. 8, lines 29-40 and cols. 10-11, lines 66-9); defining a set of events, each event in said set having a triggering condition, said primary input stream comprising sequences of partially specified program instructions for said system-under-test (col. 6, lines 9-19; col. 8, lines 29-40; cols. 9-10, lines 13-33 and col. 11, lines 10-50); recognizing that said triggering condition of one said events is satisfied (cols. 9-10, lines 13-33 and col. 11, lines 10-50); responsively to said step of recognizing (cols. 9-10, lines 5-46; and col. 11,

lines 10-50); and generating subsequent test program instructions (cols. 11-12, lines 51-14). Shrote further teaches: at least a portion of said sequence of test program instructions are randomly generated (cols. 1-2, lines 56-2).

Shrote does not mention explicitly: said each event in said set having a predetermined alternate input stream, said alternate input stream also comprising sequences of partially specified program instructions for said system-under-test; in said primary input stream, recognizing that said triggering condition of one said events is satisfied; responding to said step of recognizing by selecting one of said primary input stream and said alternate input stream as a continuation input stream; and generating subsequent test program instructions using said continuation input stream. Shrote also does not mention that: said step of defining a set of events is performed by including a portion of said events in an input file that comprises said primary input stream; said step of defining a set of events is performed by storing said set in an event file; an occurrence of said triggering condition occurs nonpredeterminedly in said primary input stream; and said events have priority values, and are processed in order of said priority values.

Liu teaches a method and computer program product for generating a test sequence for a system-under-test (see sections 0042-0054), comprising the steps and means of: using a primary input stream to generate a sequence of test program instructions for said system-under-test (Fig. 12; sections 0042-0046 and 0166); defining a set of events, each event in said set having a triggering condition and a predetermined alternate input stream, said alternate input stream comprising sequences

of partially specified program instructions for said system-under-test (Fig. 12; sections 0018, 0042-0046, 0164-0173); recognizing that said triggering condition of one said events is satisfied in said primary input stream (Fig. 12; sections 0018, 0042-0046, 0164-0173); responding to said step of recognizing by selecting one of said primary input stream and said alternate input stream as a continuation input stream (Fig. 12; sections 0018, 0042-0046, 0164-0173); and generating subsequent test program instructions using said continuation input stream (Fig. 12; sections 0018, 0042-0046, 0164-0173). Liu further teaches: said step of defining a set of events is performed by including a portion of said events in an input file that comprises said primary input stream (sections 0164-0173); said step of defining a set of events is performed by storing said set in an event file (Fig. 12 and sections 0164-0173); an occurrence of said triggering condition occurs nonpredeterminedly in said primary input stream (sections 0164-0173); and said events have priority values, and are processed in order of said priority values.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teachings of Liu into the invention of Shrote in order to provide an efficient test program generator which can be interactively programmed to integrate customized event-handling mechanisms during test program generation (Liu, sections 0164-0166).

3. Claims 66-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shrote (U.S. Pat. No. 5774358) in view of Matsuba et al. (U.S. Pat. No. 6467078) and Liu (U.S. Pub. No. 20030158720).

Shrote teaches a test program generator, comprising: a test program generation engine (Fig. 2); a design specification of a target, wherein said design specification comprises a knowledge base, wherein said test program generation engine is coupled to said specification (col. 6, lines 20-29); said test program generation engine performs a method of test program generation for a system-under-test, comprising the steps of (see Abstract): using a primary input stream to generate a sequence of test program instructions for said system-under-test (Fig. 2; col. 6, lines 9-19; col. 8, lines 29-40 and col. 10-11, lines 66-9); loading a set of events, each event in said set having a triggering condition, said primary input stream comprising sequences of partially specified program instructions for said system-under-test (col. 6, lines 9-19; col. 8, lines 29-40; cols. 9-10, lines 13-33 and col. 11, lines 10-50); recognizing that said triggering condition of one said events is satisfied (cols. 9-10, lines 13-33 and col. 11, lines 10-50); responsively to said step of recognizing (cols. 9-10, lines 5-46; and col. 11, lines 10-50); and generating subsequent test program instructions (cols. 11-12, lines 51-14).

Shrote does not mention explicitly: an architecture simulator of said target coupled to said test program generation engine, being co-operative to perform said method of test program generation; said each event in said set having a predetermined alternate input stream, said alternate input stream also comprising sequences of partially specified program instructions for said system-under-test; in said primary input stream, recognizing that said triggering condition of one said events is satisfied; responding to said step of recognizing by selecting one of said primary input stream and said alternate input stream as a continuation input stream; and generating subsequent

test program instructions using said continuation input stream. Shrote also does not mention that: said step of defining a set of events is performed by including a portion of said events in an input file that comprises said primary input stream; said step of defining a set of events is performed by storing said set in an event file; an occurrence of said triggering condition occurs nonpredeterminedly in said primary input stream; and said events have priority values, and are processed in order of said priority values.

Matsuba et al. teach a method and system for generating test program (see Abstract), comprising: a test program generator which is coupled to an architecture simulator; and said simulator is used for simulating said simulated execution (col. 2, lines 51-67; col. 3, lines 1-13, lines 39-44 and lines 58-67 and col. 4, lines 1-3 and lines 15-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teachings of Matsuba et al. into the invention of Shrote in order to execute the generated test programs on said simulator to accomplish the desired verification (Matsuba et al., col. 4, lines 15-27).

Liu teaches a method and computer program product for generating a test sequence for a system-under-test (see sections 0042-0054), comprising the steps and means of: using a primary input stream to generate a sequence of test program instructions for said system-under-test (Fig. 12; sections 0042-0046 and 0166); defining a set of events, each event in said set having a triggering condition and a predetermined alternate input stream, said alternate input stream comprising sequences of partially specified program instructions for said system-under-test (Fig. 12; sections

0018, 0042-0046, 0164-0173); recognizing that said triggering condition of one said events is satisfied in said primary input stream (Fig. 12; sections 0018, 0042-0046, 0164-0173); responding to said step of recognizing by selecting one of said primary input stream and said alternate input stream as a continuation input stream (Fig. 12; sections 0018, 0042-0046, 0164-0173); and generating subsequent test program instructions using said continuation input stream (Fig. 12; sections 0018, 0042-0046, 0164-0173). Liu further teaches: said step of defining a set of events is performed by including a portion of said events in an input file that comprises said primary input stream (sections 0164-0173); said step of defining a set of events is performed by storing said set in an event file (Fig. 12 and sections 0164-0173); an occurrence of said triggering condition occurs nonpredeterminedly in said primary input stream (sections 0164-0173); and said events have priority values, and are processed in order of said priority values.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teachings of Liu into the invention of Shrote in order to provide an efficient test program generator which can be interactively programmed to integrate customized event-handling mechanisms during test program generation (Liu, sections 0164-0166).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art Citations

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Boughner et al. (U. S. Pat. No. 5983001) disclose a Method and system for facilitating the automatic creation of test scripts.
2) Passova (U. S. Pat. No. 6671874) discloses an universal verification and validation system and method of computer-aided software quality assurance and testing.
3) Szermer (U. S. Pat. No. 5913023) discloses a method for automated generation of tests for software.

4) Sugamori et al. (U. S. Pub. No. 2003/0074153) disclose an application specific event based semiconductor memory test system.

5) Pauwels et al. (U. S. Pat. No. 5913023) disclose a test system for verifying angle/time based systems and method therefore.

6) Ellis et al. (U. S. Pat. No. 5684946) disclose an apparatus and method for improving the efficiency and quality of functional verification.

7) Brummel (U. S. Pat. No. 6564178) discloses a method and apparatus for evaluating processors for architectural compliance.

Response to Arguments

6. The cancellation of claims 1-53 are acknowledged.

Applicants' arguments received 09/15/2004 with respect to claims 54-75 have been considered but are moot in view of the new ground(s) of rejection.

Claims 54-75 are rejected as new art (U.S. Pub. No. 20030158720 to Liu) has been found to teach the limitation recited in these claims and argued by the Applicants. Detailed response is given in sections 2 and 3 as set forth above in this Office Action.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Xiuqin Sun
Examiner
Art Unit 2863

XS
October 6, 2004

John Barlow
Supervisory Patent Examiner
Technology Center 2800